

CLAIMS

1. A method of connecting together at least two workpieces using a blind rivet comprising the steps of
positioning the at least two workpieces in abutment;
positioning a blind side end face of a blind rivet against a first one of said
5 workpieces and applying a biasing force thereto to maintain said rivet in engagement with said workpiece;
rotating said rivet at a speed whilst maintaining said biasing force thereon;
utilising said biasing force to drive said rotating blind rivet through the resultant
10 heat weakened workpieces;
stopping rotation of said inserted rivet and setting said blind rivet to compress the
workpieces between a deformed portion of the rivet body and a flange portion.
2. A method as claimed in claim 1 wherein said rivet is rotated at a speed of at least
15 200rpm.
3. A method as claimed in either of claims 1 or 2 wherein said biasing force is
determined to be less than that required to force the blind rivet through the non-
weakened workpiece.
- 20 4. A method as claimed in any of the preceding claims wherein said biasing force is
between 2kN and 10kN.
5. A method as claimed in claim 4 wherein said biasing force is between 4kN and
8kN.
- 25 6. A method as claimed in any of the preceding claims wherein said rivet is rotated at
a speed of between 300rpm and 1000rpm.
7. A method as claimed in any one of the preceding claims using a blind rivet
30 wherein said blind side end face comprises an abrasive surface.
8. A method as claimed in any one of the preceding claims using a blind rivet having
a blind side end face with a workpiece engaging portion having a contact area less than
the cross sectional area of the rivet.

9. A method as claimed in claim 8 using a blind rivet with a tapered or frusto-conical blind side end face.
- 5 10. A method as claimed in any one of the preceding claims wherein the step of rotating and setting the blind rivet is carried out using the same tool.
- 10 11. A blind rivet for use in the method as claimed in any one of claims 1 to 10 having a parabolically curved blind side end face disposed co-axially with a longitudinal axis of said rivet.
12. A blind rivet for use in the method as claimed in any one of claims 1 to 10 having a frusto-conical blind side end face disposed co-axially with a longitudinal axis of said rivet.
- 15 13. A blind rivet as claimed in claim 12 having an elongate cylindrical projection extending co-axially from said frusto-conical end face.
- 20 14. A blind rivet as claimed in any one of claims 11 to 13 comprising an open ended rivet body and wherein said blind side end face is formed on a mandrel head extending beyond said rivet body.
- 25 15. A blind rivet as claimed in any one of claims 11 to 13 comprising a closed end blind rivet wherein said blind side end face is formed on said closed end of said rivet body.
16. A blind rivet as claimed in any one of claims 11 to 15 wherein said blind side end face is formed with an abrasive surface.
- 30 17. A blind rivet as claimed in claim 16 wherein said abrasive surface comprises a coating of abrasive material.
18. A blind rivet comprising a workpiece engaging blind side end face, wherein said end face is provided with an abrasive surface.

19. A method of connecting together at least two workpieces using a blind rivet substantially as herein described and/or with reference to the accompanying illustrative drawings.